EDUCATION

**Kellogg School of Management, Northwestern University**

*PhD, Accounting Information and Management*

- Thesis Proposal: The Real Effects of Accounting on Innovation
- Committee: Andrew Leone (Co-Chair), Sugata Roychowdhury (Co-Chair), Beverly Walther, Ronald Dye, Dimitris Papanikolaou

**Northwestern University**

*MSc, Chemistry*

- Committee: Fraser Stoddart [Nobel Laureate] (Chair), Regan Thomson, Michael Wasielewski

**Middle East Technical University**

*BSc (High Honor), Industrial Engineering*

*Double Major Student, Chemistry*

RESEARCH INTERESTS

- Financial accounting, real effects of accounting, innovation

WORKING PAPERS

**The Real Effects of Accounting on Innovation: Evidence from ASC 606**

*Job Market Paper*

- R&R at *The Accounting Review*
- Presented at Seven Minutes of Scholarship: An Interdisciplinary Symposium, LBS Trans Atlantic Doctoral Conference, Wharton Innovation Doctoral Symposium
- **Summary:** This study investigates the impact of the recent revenue recognition rule change, Accounting Standard Codification (ASC) 606, on drug development firms’ investments in R&D alliances and innovation outcomes. ASC 606 allows managers to change revenue recognition timing and increases disclosure requirements. I find that drug development firms dependent on R&D alliance revenues accelerate revenue recognition and concurrently disclose more about the recognition process following ASC 606 adoption. Consistent with a resultant decrease in information asymmetry between managers and investors, these firms raise more capital and increase investments in R&D. Importantly, they form more R&D alliances as the information asymmetry between peer firms also decreases upon adopting ASC 606. Finally, I show that affected drug development firms exhibit higher innovation proxied by the number of drug candidates, number of patents, patent values, and citations. These findings suggest a specific and concrete mechanism of the real effects of a specific financial reporting standard on R&D alliances and innovation outcomes.

**When Does Innovation Die? Ideas Are Getting Harder to Find**

*with Ferhat Akbas and Egemen Gene*

- **Summary:** In this paper, we propose a novel measure based on patents to identify firms that have a better pipeline for innovations and have a better potential to innovate successfully. Specifically, using advanced machine learning techniques, we compare the textual similarity and distinctiveness of the topical content of each pair of patent claim sections in a firm’s innovation pipeline. We first present evidence that firms with a more distinct set of claims have better innovation and operational performance in the future. Second, we show that our measure is a significant predictor of future
stock returns up to three year period. Finally, we compare risk-based and underreaction-based explanations for return predictability and find overwhelming support for the risk-based explanation.

WORK IN PROGRESS

Machine Learning Based Industry Clusters (with Doyeon Kim and Andrew Leone)

• **Summary:** It has been puzzling that prior literature shows current industry classifications have limited explanatory power in predicting profitability compared to the aggregate economy. We investigate this puzzle by proposing novel industry clusters based on patents since patents are inherently future looking. Specifically, by using a cutting-edge machine learning technique in textual analysis, we clustered firms based on their patents’ textual similarity every year. The results show that our industry clusters explain future profitability and stock returns significantly better than other common industry classifications, SIC, NAICS, and GICS, and the aggregate market.

Market for Innovation and Firm Innovation Strategy (with Sugata Roychowdhury and Valerie Zhang)

• **Summary:** In this paper, we investigate how patent disclosure regulations affect the market for innovation, innovation process, and outcomes. We use American Investors Protection Act (AIPA) as an exogenous shock to patent disclosure, which reveals all patent applications are within 18 months after the patent filing while only granted patents were disclosed before. First, consistent with AIPA reducing information asymmetry between firms, we find that AIPA facilitates more patent sales as it provides more information about firms’ patent application portfolios timely. Furthermore, we show that the profitability of a patent buyer increases more compared to pre-AIPA sales. Second, we show the heterogenous effect of AIPA on firm innovation strategies across industries. For instance, while drug development firms increase alliances but decrease patent sales to competitors, software companies increase patent sales, especially to competitors.

Financing Innovation with Debt: Patent Collateralizability (with Efraim Benmelech)

OTHER PUBLICATIONS


• Cited by: 46 (November 9, 2022)


• Cited by: 217 (November 9, 2022)

CONFERENCES & PRESENTATIONS

Accounting for an Ever-Changing World (FASB-IASB-TAR Joint Conference) 2022

Journal of Accounting and Economics Conference 2022

Annual Accounting Research Conference in Memory of Nicholas Dopuch (poster presenter) 2022

Seven Minutes of Scholarship: An Interdisciplinary Symposium 2022

AAA/Deloitte Foundation/J. Michael Cook Doctoral Consortium 2022

LBS Trans Atlantic Doctoral Conference (presenter and discussant) 2022

Wharton Innovation Doctoral Symposium (presenter and discussant) 2022

UNC Tax Doctoral Consortium 2022

FARS Doctoral Consortium 2021

OTHER CONFERENCES

13th International Symposium on Macrocyclic and Supramolecular Chemistry 2018
PROFESSIONAL SERVICES

Ad Hoc Reviewer - FARS Midyear Meeting

TEACHING EXPERIENCE

Kellogg School of Management, Northwestern University  Evanston, IL
Teaching Assistant  2020 – 2022
- ACCT430 - Accounting for Management Decision Making (MBA course)
- ACCT435 - Accounting for Management Decision Making (MBAi course)
- ACCT430X - Financial Reporting Systems (Executive MBA course)
- ACCT530 - Special Topics in Empirical Accounting Research (PhD course)

Northwestern University  Evanston, IL
Teaching Assistant  2017 – 2018
- CHEM-230 Organic Laboratory I, II, III (Undergraduate courses)

The Scientific and Technological Research Council of Turkey (TUBITAK)  TURKEY
Teaching Assistant  2012 – 2014
- Instructing high school olympiad students in chemistry branch on Organic, Inorganic, Physical and Analytical chemistry

MAJOR HONORS & AWARDS

Northwestern University Fellowship  2017 – 2023
METU Dean’s High Honor List  2012 – 2017
TUBITAK Scholarship  2012 – 2017

Gold Medalist 44th International Chemistry Olympiad  2012
Bronze Medalist at International Sustainable World Project Competition  2012
Bronze Medalist at INEPO Environmental Project Competition  2012
Silver Medalist at 43rd International Chemistry Olympiad  2011
First Place at 20th International MEF-EBAV Project Competition  2011

Gold Medalist at 19th TUBITAK National Science Olympiad  2011
Silver Medalist at 18th TUBITAK National Science Olympiad  2010
Bronze Medalist at 17th TUBITAK National Science Olympiad  2009

OTHER
Computing: Python
Languages: Turkish (native), English (fluent)